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## Quercetin ameliorates the hepato-renal toxicity induced by *Echis coloratus* snake venom in rats

Abdulrahman K Al Asmari, Rajamohamed Abbasmanthiri, Nasreddien Mohammed Abdo Osman, Sara Abdulrahman Al Asmari and Faiz Saeed  
Prince Sultan Military Medical City, Saudi Arabia

The application of new drugs derived from plant resources were being investigated and explored by scientists since long ago, for snakebite treatment, as an alternative to anti-venom therapy, that has several limitations. Flavonoids, the naturally produced antioxidants, are abundantly available in plants, and are largely consumed in daily diet, recently. The aim of this study is to investigate and evaluate the potential effects of the flavonoid (quercetin) on envenoming of albino rats by sub-lethal venom (3.84 mg/kg, i.p.) doses of *Echis coloratus* (Ec) viper crude venom. Quercetin (30 µM/kg, i.p.) doses were administered to evaluate their beneficial effects on the induced venom hepato-renal toxicity by assessing and measuring selected stress biomarkers. Results were obtained by biochemical studies of tissues and sera after sacrificing the animal groups. Significant increase levels of AST, ALT, ALP and creatinine were observed. Histopathological damage of the tissue's architecture and rise in the liver and kidney MDA levels were also significant. In conclusion, the reversal effects of modulation of the biochemical parameters and histological damage are attributed to the potential protective effects that ensued after administration of the quercetin. However, further studies are warranted to facilitate that quercetin ameliorates the toxicity induced by Ec snake venom in experimental animals.

abdulrahman.alasmari@gmail.com